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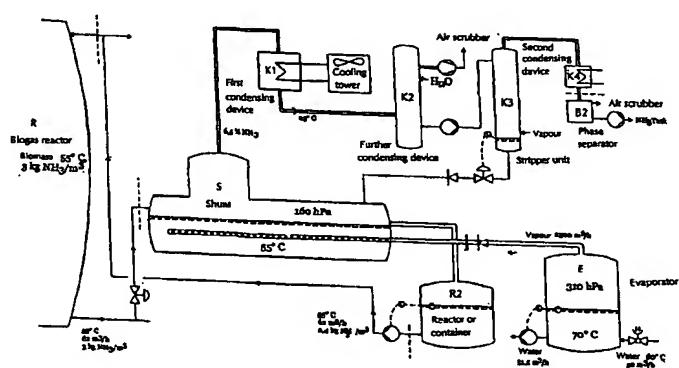
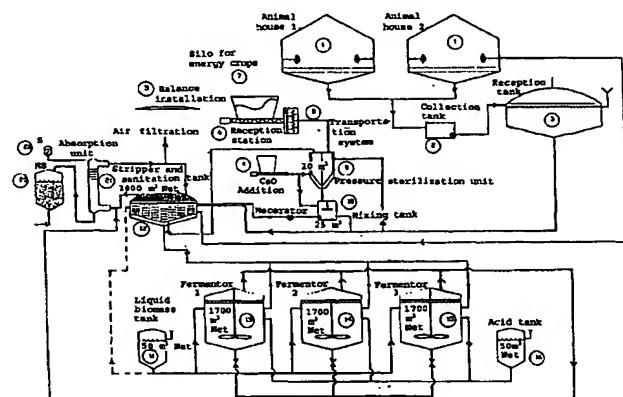
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[Continued on next page]

(54) Title: METHOD AND DEVICE FOR STRIPPING AMMONIA FROM LIQUIDS



(57) Abstract: The present invention in a first aspect provides a method and a system for stripping volatile compounds such as ammonia from e.g. fermentation liquids. Part of the ammonia is stripped from the liquid in a stripper system comprising a shunt through which liquid such as e.g. fermentation medium comprising a biomass can be diverted in the form of a side stream in liquid contact with a main fermentor(s). The stripper system is connected to an evaporator. In the evaporator aqueous liquid is heated at a pressure below atmospheric pressure whereby vapour is developed at a temperature below 100°C. The vapour from the evaporator is directed to the liquid medium comprising ammonia and this results in ammonia being stripped from the liquid and transferred to the vapour phase. The vapour phase is condensed in first condenser at a low pressure, e.g. a pressure well below 1 bar, and the liquid thus obtained is further treated in a stripper unit at a higher pressure, such as e.g. a pressure at or above 1 bar, to obtain a more concentrated solution of ammonia. When stripped for at least part of the ammonia the liquid initially obtained from the biogas reactor and diverted to the shunt can be returned to the reactor.

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**Declarations under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B01D C02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 246 417 A (TSAO UTAH) 20 January 1981 (1981-01-20) column 2, line 52 - line 59 column 3, line 27 - line 32; figure 1 ---	1-100
A	US 4 323 430 A (GLASSMAN DONALD ET AL) 6 April 1982 (1982-04-06) column 8, line 3 - line 15; figure 2 ---	1-100
A	US 4 801 356 A (GRASSO ALBERT P) 31 January 1989 (1989-01-31) column 3, line 9 - line 42 column 3, line 58 - line 66; figure 1 ---	1-100

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

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